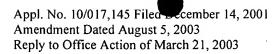
Appl. No. 10/017,145 Filed Secember 14, 2001 Amendment Dated August 5, 2003 Reply to Office Action of March 21, 2003

Claim Listing This listing of claims will replace all prior versions and listings of claims in the application:

- 185
- 1. (currently amended) A mutant castor  $\Delta^9$ -18:0-ACP desaturase with a substantial increase in activity towards fatty acid substrates with chains containing fewer than 18 carbon atoms having one two or more amino acid substitutions selected from the group consisting of:
  - a) Ala or Thr for Met at residue 114 of SEQ ID NO: 1;
  - b) Arg for Thr at residue 117 of SEQ ID NO: 1;
  - c) Gly or Ala for Leu at residue 118 of SEQ ID NO: 1;
  - d) Val or Leu for Pro at residue 179 of SEQ ID NO: 1;
  - e) Val or Ser for Thr at residue 181 of SEQ ID NO: 1; and
  - f) Leu for Gly at residue 188 of SEQ ID NO: 1.
  - 2. (cancelled)
- 3. (currently amended) The mutant castor  $\Delta^9$ -18:0-ACP desaturase of Claim 1 which has having the amino acid substitutions Arg for Thr at residue 117 of SEQ ID NO: 1 and Leu for Gly at residue 188 of SEQ ID NO: 1.
- 4. (currently amended) The mutant castor  $\Delta^9$ -18:0-ACP desaturase of Claim  $\pm 3$  which contains having each of the following additional amino acid substitutions:
  - a) Ala for Met at residue 114 of SEQ ID NO: 1;





- b) Arg for Thr at residue 117 of SEQ ID NO: 1;
- eb) Gly for Leu at residue 118 of SEQ ID NO: 1;
- dc) Val for Pro at residue 179 of SEQ ID NO: 1; and
- ed) Val for Thr at residue 181 of SEQ ID NO: 1; and
- f) Leu for Gly at residue 188 of SEQ ID NO: 1.
- 5. (currently amended) The mutant castor  $\Delta^9$ -18:0-ACP desaturase of Claim  $\pm 3$  which contains having each of the following additional amino acid substitutions:
  - a) Thr for Met at residue 114 of SEQ ID NO: 1;
  - b) Arg for Thr at residue 117 of SEQ ID NO: 1;
  - eb) Ala for Leu at residue 118 of SEQ ID NO: 1;
  - dc) Leu for Pro at residue 179 of SEQ ID NO: 1; and
  - ed) Ser for Thr at residue 181 of SEQ ID NO: 1; and
  - f) Leu for Gly at residue 188 of SEQ ID NO: 1.

Claims 6-29 (withdrawn).

- / 30. (cancelled)
- 31. (cancelled)

Claims 32-59 (withdrawn)

60. (new) The mutant castor  $\Delta^9$ -18:0-ACP desaturase of Claim 1 having the amino acid substitutions Arg for Thr at residue 117 of SEQ ID NO: 1 and Leu for Pro at residue 179 of SEQ ID NO: 1.